

4. BMP Specifications

4.1 Check Dam

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Definition

Small temporary barrier, grade control structure, or dam constructed across a swale, drainage ditch, or areas of concentrated flow.

Purpose

Check dams are used to minimize the erosion rate by reducing the velocity of stormwater in areas of concentrated flow.



Conditions

This practice is applicable for use in small open channels and is not to be used in a live stream. Specific applications include:

1. Temporary or permanent swales or ditches in need of protection during establishment of grass linings.
2. Temporary or permanent swales or ditches, which, due to their short length of service or other reasons, cannot receive a permanent non-erodible line for an extended period of time.
3. Other locations where small localized erosion and resulting sedimentation problems exist.

Design Criteria

Formal design is not required. The following standards shall be used.

Drainage Area

The drainage area of the check dam will not exceed 2 acres.

Height

The center of the check dam must be at least 9 inches lower than the outer edges. Dam height should be no more than 2 feet measured to center of check dam.

Sides Slopes

Side slopes shall not be steeper than 2 horizontal to 1 vertical (2:1).

Spacing

Two or more check dams may be required for drainage areas greater than 1 acre. Maximum spacing between dams should be such that the toe of the upstream dam is at the same elevation as the top of the downstream dam.

Geotextiles

Suitable geotextiles should be placed between the rock and its soil base and abutments to prevent soil movement in the foundation and abutments.

Construction Specifications

The following types of check dams are used for this standard:

Stone Check Dams

Stone check dams should be constructed of graded 2- to 10-inch stone. See Figure 4.1.1. Mechanical or hand placement shall be required to ensure complete coverage of entire width of ditch or swale and that center of dam is lower than edges.

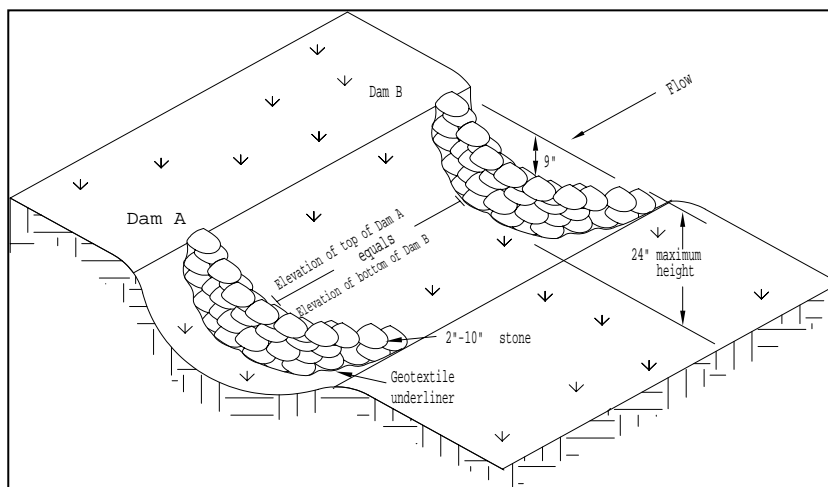


Figure 4.1.1 Stone Check Dam Installation Requirements

Haybale Check Dams

Staked and embedded haybales may be used as temporary check dams in concentrated flow areas while vegetation is becoming established. Haybales should not be used where the drainage area exceeds 1 acre and must be embedded a minimum of 4 inches. See Figure 4.1.2.

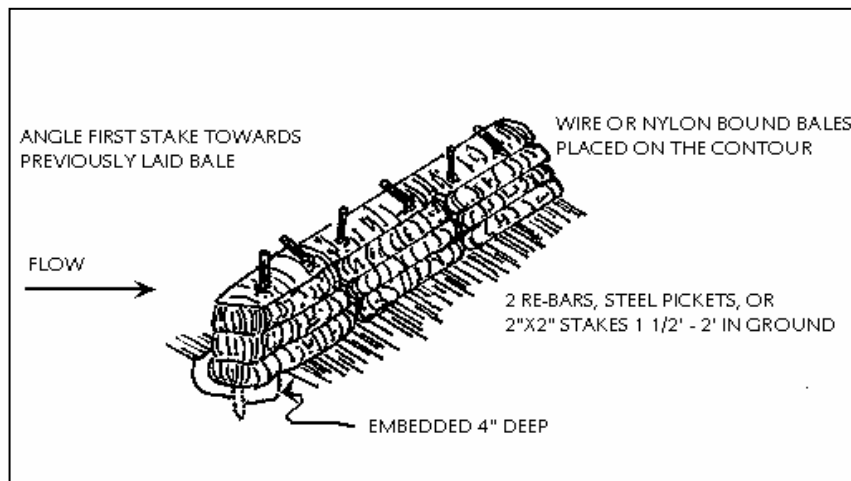


Figure 4.1.2 Straw Bale Barrier Installation Requirements

Maintenance

Periodic inspections and regular maintenance must be provided. Sediment should be removed when it reaches a depth of one-half the original dam height or before. Check dams must be removed at the completion of their useful life. After removal, the area beneath the dam should be seeded and mulched immediately.